

Review:

1. What kind of elements make up an ionic compound?

metal : nonmetals → ions
(charge)

2. What does an ionic compound do with its electrons?

lose/gain → transfer →

3. What elements make up a molecular (covalent) compound?

nonmetals

4. What does a molecular compound do with its electrons?

share → no ions → no charges

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VOCAB:

lone pairs: electrons that are not shared with another atom

..

shared pairs: electrons that are shared with another atom

—
↑
shared pair

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Steps to Drawing a Lewis Structure:

- Determine the number of valence electrons for each atom.
- Calculate the number of pairs (sets of 2) of valence electrons by dividing by 2.
- Place the chemical symbols in order based on:
 - the most electronegative element goes in the middle
 - the element with the least number of atoms goes in the middle
 - Carbon ALWAYS goes in the middle
 - Halogens can NEVER go in the middle (Why?) *they only need 1e⁻*
 - Hydrogen can NEVER go in the middle (Why?) *↗*
 - place the other elements around the central atom
- Determine how many pairs you need (each element wants 4 pairs --octet)
- For every pair you are short, that is how many bonds you need to share (double bond, triple bond)

$=$ \equiv

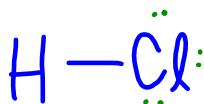
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Practice:

HCl

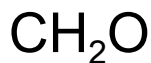
$$1 + 7 = \frac{8}{2} = 4 \text{ pairs}$$

3



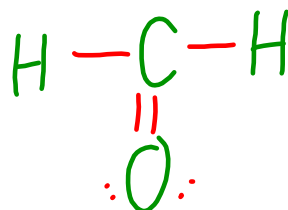
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Practice:



$$4 + 2(1) + 6 = 12 = \frac{12}{2} = 6 \text{ pairs}$$

~~3~~ ~~2~~ 0



need
1
3
4 0

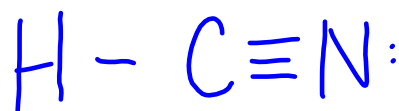
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Practice:



$$1 + 4 + 5 = 10 = \frac{10}{2} = 5 \text{ pairs}$$

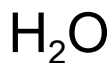
~~3~~ ~~1~~ 0



need
2
3
5

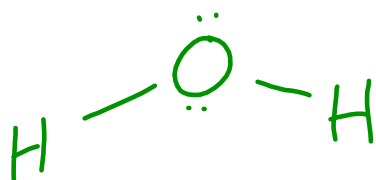
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Practice:



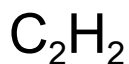
$$2(1) + 6 = \frac{8}{2} = 4 \text{ pairs}$$

~~2~~ 0



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Practice:



$$2(4) + 2(1) = \frac{10}{2} = 5 \text{ pairs}$$

~~2~~



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